

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of purifying impure water contaminated with a filterable impurity and a dissolved impurity, the method comprising the steps of:

providing impure water to a primary microfiltration or ultrafiltration unit to remove the filterable impurity and produce impure filtered water contaminated with a dissolved impurity;

providing the impure filtered water contaminated with a dissolved impurity to a reverse osmosis unit to produce a potable water stream and a residual reverse osmosis stream; and

treating the residual reverse osmosis stream by ~~being passed~~ passing the stream through a secondary filter to produce a treated residual reverse osmosis stream; and

~~prior to reuse to backwashing~~ the primary microfiltration or ultrafiltration unit with the treated residual reverse osmosis stream.

2. (Currently Amended) [[A]]The method according to claim 1 wherein the secondary filter is a microfiltration or ultrafiltration membrane.

3. (Currently Amended) [[A]]The method according to claim 2 wherein the secondary filter is backwashed.

4. (Currently Amended) [[A]]The method according to claim 1 wherein the secondary filter is a cartridge filter.

5. (Currently Amended) [[A]]The method according to claim 4 wherein the secondary filter is backwashed.

6. (Currently Amended) [[A]]The method according to claim 1 wherein the impure water is sea water.

7. (Currently Amended) [[A]]The method according to claim 1 wherein the insoluble impurities filterable impurity includes those typically found in sea water.

8. Cancelled.

9. Cancelled.

10. (Currently Amended) [[A]]The method according to claim [[9]]1 wherein the dissolved impurities impurity includes sodium ions and chloride ions.

11. (Currently Amended) [[A]]The method according to claim 1 wherein further comprising treating the residual reverse osmosis stream is treated prior to being reused by one or more of a chemical treatment, a radiation treatment or a physical treatment.

12. (Currently Amended) [[A]]The method according to claim 11 wherein the chemical treatment is chlorination, fluorination, disinfection, scale control treatment, water softening, peroxide, sulfite/bisulfite, ozone or mixtures thereof.

13. (Currently Amended) [[A]]The method according to claim 11 wherein the radiation treatment is selected from the group consisting of UV, IR, microwave or mixtures thereof.

14. (Currently Amended) [[A]]The method according to claim 11 wherein the physical treatment is ultrasonication or vortexing.

15. (Currently Amended) [[A]]The method according to claim 11 wherein the reverse osmosis stream is treated by heat, electroprecipitationelectroprecipitation, magnetic treatments or combination thereof.

16. (Currently Amended) [[A]]The method according to claim 1 wherein further

~~comprising subjecting the residual reverse osmosis feedstream is used to backwash the primary microfiltration or ultrafiltration unit and is subject to ultrafiltration or microfiltration by a secondary ultrafiltration or microfiltration unit prior to said the step of backwashing.~~

17. (Currently Amended) [[A]]The method according to claim 1 wherein the ~~secondary filter step of treating~~ comprises filtering using multiple stages of filtration.

18. (Currently Amended) [[A]]The method according to claim 17 wherein the ~~multiple stages of filtration include a first filtration step of treating~~ comprises filtering through a coarse filter prior to filtration filtering through a membrane filter.

19. (Currently Amended) [[A]]The method according to claim 18 wherein the ~~residual reverse osmosis rejectstream~~ is in controllable fluid communication with coarse backwashable filters such as single or multimedia filters, disc filters, diatomaceous earth filters, membrane filters, strainers, or screens.

20. (Currently Amended) A method of purifying facilitating the purification of impure water, the method comprising the steps of:

providing a primary microfiltration or ultrafiltration unit[[,]];

providing a reverse osmosis unit in downstream fluid communication from said primary microfiltration or ultrafiltration unit, ~~and~~;

providing a secondary microfiltration or ultrafiltration unit to produce a filtered residual reverse osmosis stream; and

providing a controllable fluid pathway for directing the filtered residual reverse osmosis feed to backwash said primary microfiltration or ultrafiltration unit; ~~and~~

~~wherein the residual reverse osmosis feed is further subjected to ultrafiltration or microfiltration by a secondary ultrafiltration or microfiltration unit prior to a step of backwashing the primary ultrafiltration or microfiltration.~~

21. (Currently Amended) [[A]]The method according to claim 20 wherein the ~~filtered residual reverse osmosis rejectfeed used to backwash the filter~~ has a suspended solids

content of less than a predetermined quantity.

22. (Currently Amended) [[A]]The method according to claim 21 wherein the filtered residual reverse osmosis rejectfeed ~~used to backwash the filter~~ has a suspended solids content sufficient to allow it to be returned to the impure water source.

23. (Currently Amended) [[A]]The method according to claim 22 wherein the residual reverse osmosis rejectfeed used to backwash the filter has a suspended solids content sufficient to allow it to be returned to the ocean.

24. Cancelled.

25. (Currently Amended) Apparatus A system for purifying impure water contaminated with a filterable impurity and a dissolved impurity, ~~the apparatus~~ comprising:

a primary microfiltration or ultrafiltration unit to remove the filterable impurity;

a reverse osmosis unit to produce a potable water stream and a residual reverse osmosis stream~~[[;]]~~, said reverse osmosis unit in downstream fluid communication from said primary microfiltration or ultrafiltration unit;

a controllable fluid pathway to transfer a stream of impure filtered water contaminated with a dissolved impurity from the primary microfiltration or ultrafiltration unit to the reverse osmosis unit; and

means for treating the residual reverse osmosis stream ~~prior to reuse~~ to produce a treated residual reverse osmosis stream; and

a controllable fluid pathway directing the treated residual reverse osmosis stream to backwash the primary microfiltration or ultrafiltration unit.

26. Cancelled.

27. (Currently Amended) Apparatus The system according to claim 25 ~~wherein the residual reverse osmosis stream is directed by~~ further comprising a controllable fluid pathway directing the residual reverse osmosis stream through a secondary microfiltration or

ultrafiltration membrane to backwash the primary microfiltration or ultrafiltration unit.

28. (Currently Amended) ~~Apparatus~~ The system according to claim 25 further including one or any combination of ports for the introduction of chemical agents, irradiation means, ultrasonic generators, vortexing devices, heating elements, electroprecipitators and magnets.

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29. (Currently Amended) ~~Apparatus~~ The system according to claim [[25]]28 wherein the chemical agents are chlorination agents, fluorination agents, ozonation agents, disinfecting agents, scale control treatment agents, water softening agents, peroxide, sulfite/bisulfite.

30. (Currently Amended) ~~Apparatus~~ The system according to claim 25 for purifying impure water contaminated with a filterable impurity and a dissolved impurity, ~~the apparatus~~ comprising:

a primary microfiltration or ultrafiltration unit to remove the filterable impurity; a reverse osmosis unit to produce a potable water stream and a residual reverse osmosis stream; said reverse osmosis unit in downstream fluid communication from said primary microfiltration or ultrafiltration unit;

a controllable fluid pathway to transfer impure filtered water ~~comprising~~with a dissolved impurity from the primary microfiltration or ultrafiltration unit to the reverse osmosis unit; and

a conduit to transfer a residual reverse osmosis stream from the reverse osmosis unit to backwash the primary microfiltration or ultrafiltration unit via a secondary microfiltration or ultrafiltration unit.

31. (Currently Amended) ~~Apparatus~~ The system according to claim 25 wherein the secondary microfiltration or ultrafiltration unit is a backwashable or disposable cartridge micro filtration or ultrafiltration system.

32. (Currently Amended) ~~Apparatus~~ The system according to claim 25 wherein the secondary microfiltration or ultrafiltration unit comprises multiple stages of filtration.

33. (Currently Amended) ~~Apparatus~~ The system according to claim 32 wherein the multiple stages of filtration include a first filtration through a coarse filter prior to filtration through a membrane filter.

34. (Currently Amended) ~~Apparatus~~ The system according to claim 25 wherein the residual reverse osmosis ~~reject~~stream is in controllable fluid communication with coarse backwashable filters such as single or multimedia filters, disc filters, diatomaceous earth filters, membrane filters, strainers, or screens.